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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,424	09/17/2004	Wolfgang Vollrath	RECP:111US	5423
24041 7590 08/10/2007 SIMPSON & SIMPSON, PLLC 5555 MAIN STREET WILLIAMSVILLE, NY 14221-5406			EXAMINER RUTLEDGE, DELLA J	
			ART UNIT 2851	PAPER NUMBER
			MAIL DATE 08/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/711,424	Applicant(s) VOLLRATH ET AL.	
	Examiner D. Rutledge	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 10-18 is/are rejected.
- 7) ☒ Claim(s) 2 and 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/06</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 23 September 2003. It is noted, however, that applicant has not filed a certified copy of the DE 103 43 876.9 application as required by 35 U.S.C. 119(b).

Oath/Declaration

2. An executed combined Declaration and Power of Attorney was received on 22 December 2004.

Claim Objections

3. Claims 4 and 6, lack proper antecedent basis for the term "the device".
Claim 9 depends from itself.
Correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 3 – 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 3 is rejected to because the applicant has left out a word(s), making the claim indefinite since it is not clear what is "integral" for applying the liquid.

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7. Claims 4 – 7 are rejected because it is not clear to what “device embodied as a cylinder...” is referring, since no device has been previously claimed.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1, 8, 10 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (US Pub No. 2005/0052642) alone or in view of Watson et al. (US Pub. No. 2004/0065517)

Claims 1: The reference discloses an apparatus for inspecting a mask 1 for the semiconductor industry in which the mask 1 is immersed in a liquid 5. The inspection is for measuring defects, and one of ordinary skill in the art would recognize that one of

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the types of defects may include the width of the mask 1 and the width of features in the mask will affect the images exposed on the substrate. The reference does not disclose a carrier plate in a vibration isolated environment. Using a vibration isolation or vibration decoupling arrangement for a mask is well known in the art. Vibration can affect the values measured, and would have motivated one of ordinary skill in the art to use a vibration decoupled arrangement as claimed. Watson et al., although having an exposure apparatus, discloses isolating the mask 16 on the scanning stage 40 which rests on the carrier plate 38 has a vibration decoupling arrangement 12, 68, 76.

Claim 8: the liquid 5 completely covers the surface of the mask 1, see Fig. 1

Claims 10, 17: a front element 30 of the objective is wetted with the liquid, see Fig. 2

Claims 11, 18: the liquid is pure water, see paragraph [0082]

Claim 12: inert oil may be used as the liquid, see paragraph [0081]

Claims 13 - 16: since the apparatus may be used for detecting defects below the 11 nm level, the wavelength would be within the range claimed, see paragraph [0008]

Allowable Subject Matter

11. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose an apparatus for measuring feature width on masks with liquid provided between the objective and the surface of the mask and

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wherein a precision metering nozzle, which applies a liquid exclusively onto at least one measurement point located on the surface of the mask, is associated with the objective.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lange (US Pat. No. 7,130,037) inspects a mask and uses an immersion liquid.


Response Data

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Rutledge whose telephone number is (571) 272-2127. The examiner can normally be reached on Mon - Thurs, 6:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


D. Rutledge
Primary Examiner
Art Unit 2851

dr
08/06/2007